

## Factors influencing research productivity among lecturers in teachers' colleges in Zimbabwe.

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### Abstract

Literature has shown that factors generally associated with lecturers' research productivity include workload, funding, resource availability and motivation. What appears to be less noticeable in teachers' colleges is the engagement of lecturers in carrying out research and publishing. The main purpose of the study was to find out the factors influencing research productivity among lecturers in teachers' colleges in Zimbabwe. The descriptive survey design was used. Lecturers from five teachers colleges were surveyed. Responses from fifty randomly selected lecturers were obtained through the use of questionnaires. From the thirty variables presented, factor analysis was used for data reduction, identification and description of the major factors influencing research productivity as noted by respondents. Logistic regression was performed to assess the effect of each extracted factor on the publishing status of lecturers. The study showed that six main factors, namely, workload, research culture, research opportunities, extrinsic motivation, research knowledge and intrinsic motivation in that order, contribute to research productivity. The study also revealed that the publishing status of respondents is significantly low (31.2 %) The factors identified however, do not seem to significantly influence publishing status of the respondents on their own. This could be because of variations in institutional resources and expectations. These variations could also contribute to the low publishing status or research productivity of the lecturers in teachers' colleges in Zimbabwe. Further research could be carried out to find out lecturers' attitudes towards research and publishing as well as the effect of variation in research culture among colleges.

**Keywords:** Publishing status, research culture, research productivity, teachers' colleges.

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### Introduction

Research productivity is defined in this study as an assessment of the extent to which lecturers in teachers' colleges engage in their own research and publish researched articles. The number of publications has often been used by the administration in institutions to judge faculty productivity. (Massy and Wilger, 1995; Sharobeam and Howard, 2002).

All teachers colleges in Zimbabwe require students to undertake some research work culminating in a research project to be presented towards their final assessment. What appears to be less noticeable is the engagement of lecturers themselves in carrying out their own research and publishing it. While many lecturers in teachers' colleges hold Masters' degrees, implying sufficient grounding in research work, there is a dearth of research publication among lecturers in teachers colleges as noted by Ndemera (1999).

The situation could be significantly different in universities, according to papers presented at the Workshop on Research and Information Management at Institutional Level for Vice Principals of Tertiary Institutions in 1999. Research culture seems to be adequately entrenched in universities due to, among other reasons, the need for advancement and promotion in one's career. In a paper delivered in the same workshop, Mudzi (1999) stressed the importance of research in the management of critical issues such as policy formulation. She noted that research is a potent tool in generating knowledge. In Zimbabwean colleges of education this could translate into the production of much needed materials and thus curb the over dependence on foreign material.

Shanklin (2001) carried out a study to evaluate research productivity and culture within university faculties. She reported that most research studies have found a positive correlation between departmental culture and research productivity.

Departmental culture refers to “the shared values and attitudes within the academic unit” (Shanklin, 2001). Faculty members who operate in a research oriented culture maintain dialogue with other researchers through internal and external communication, and thus seek opportunities for collaborative research. Mahler (2002) observes that the low priority given to research in terms of funding and other support as compared to teaching is as a result of the lack of research culture in academic communities.

Studies by Dunbar and Lewis (1998) showed a relationship between research productivity and organizational size, that is, the number of faculty members. It would appear that a critical mass is a prerequisite for research productivity. According to these researchers, research productivity would be greater in large institutions and in large departments within institutions.

Most of the existing literature focuses on research productivity among university lecturers and not on lecturers in teachers' colleges especially in developing countries such as Zimbabwe. There was thus a felt need for a well-documented study of research productivity among lecturers in teachers' colleges in Zimbabwe. The present study sought to address this gap. Its main objectives were to determine the status of publishing (research productivity) among lecturers in teachers' colleges in Zimbabwe as well as to identify factors that influence research productivity among the same lecturers.

### Research Methodology

The descriptive research design was used. This design was preferred because it afforded the researchers the opportunity to gather relevant data required to describe the factors influencing research productivity amongst the targeted population (Cohen and Manion, 1994).

Stratified random sampling was used to select a sample of 50 lecturers from five teachers colleges. Out of the 14 teachers' colleges in Zimbabwe, five were randomly selected. From each of the sampled teachers colleges, 10 lecturers were selected using random sampling.

A structured questionnaire consisting of three sections was the main instrument used in this study. Part 1 of the questionnaire sought information on bio-data of the respondents, part 2 focused on possible factors influencing research productivity and part 3 focused on general information where the hereby

respondents were asked to offer their own views regarding research productivity at their own institutions. The questionnaire consisted of thirty closed items and eight open-ended items. The inclusion of open-ended items enabled researchers to elicit unsolicited information from the respondents thereby enriching the data field.

Factor analysis was used for data reduction. This enabled the researchers to identify and describe the major factors influencing research productivity as noted by the respondents. According to Rummel (1970) factor analysis is an effective tool for data reduction through classifying and grouping related items or variables. Thus data could be transformed rendering it relatively easier to interpret. Logistic regression was performed to assess or predict the effect of the identified factors on research productivity (Agresti, 1996).

### Results

Table 1 presents descriptive statistics of research productivity variables under consideration. These statistics include mean, standard deviation and rank. Calculated on a five point Likert scale ranging from 1- strongly agree to 5 strongly disagree, the mean values show the extent of respondents' view towards a given variable. The following key was used to interpret mean values obtained: 1 to 2.5 denotes agreement, 2.6 to 3.5 denotes indecision and 3.6 to 5 denotes disagreement.

Lecturers stated that they were keen and confident to carry out research. This was reflected by the mean values for the relevant items 26 and 10 in Table 1, which lie between 1.0 and 2.5, respectively. Thus lecturers' interest and confidence in carrying out research was confirmed.

Respondents tended to disagree that research funds are available and that lecturing loads allow time for research. The mean values for items 19 and 25 in Table 1 lie between 3.5 and 5.0, respectively. The study thus showed that time and funds are limiting factors on research productivity.

Using factor analysis, the thirty variables in Table 1 were reduced to six factors as shown in Table 2. This was done through analyzing and grouping together related variables. The corresponding factor loadings show the relative standing of each variable in the group. Variables with a factor loading greater than 0.5 were considered significant.

**Table 1:** Descriptive Statistics for Research Productivity

| Item | Description  | Mean   | Std Dev | Rank |
|------|--|--------|---------|------|
| 22   | Lecturing load is adjusted accordingly for research work.                        | 4.1042 | 1.0156  | 1    |
| 30   | Funding for participating in research conferences is readily available.          | 4.0000 | 0.9225  | 2    |
| 19   | Research funds are available for lecturers.                                      | 3.9787 | 0.9888  | 3    |
| 25   | Teaching load does not affect lecturers' engagement in research.                 | 3.7708 | 1.1713  | 4    |
| 15   | There is adequate coordination of lecturers' research work.                      | 3.6458 | 0.8870  | 5    |
| 24   | I spend at least 2 hours per week on personal research.                          | 3.4583 | 1.1291  | 6    |
| 17   | The library has recent journals for research.                                    | 3.4043 | 1.0766  | 7    |
| 5    | There is recognition of lecturers who publish research.                          | 3.3958 | 1.2673  | 8    |
| 4    | Some college decisions are made on the basis of research.                        | 3.3958 | 1.0865  | 9    |
| 20   | Workshops to develop research skills among lecturers are held regularly.         | 3.3333 | 1.1910  | 10   |
| 16   | There are adequate internet facilities at the college.                           | 3.3125 | 1.3862  | 11   |
| 6    | Lecturers work collaboratively on research.                                      | 3.1277 | 1.0958  | 12   |
| 18   | The library is fully equipped with books for research.                           | 3.1257 | 1.2653  | 13   |
| 3    | Lecturers are adequately inducted into research work.                            | 3.1064 | 1.0882  | 14   |
| 8    | There is a definite research culture in my department.                           | 3.0417 | 1.1101  | 15   |
| 23   | Administrative duties reduce time available for research.                        | 2.9792 | 1.3604  | 16   |
| 1    | The college has a strong culture of research                                     | 2.9787 | 1.0527  | 17   |
| 9    | Formulating a research topic is very difficult for me                            | 2.9167 | 1.3966  | 18   |
| 7    | Lecturers are expected to carry out and publish research.                        | 2.6458 | 1.2115  | 19   |
| 13   | I have sound knowledge of research methods.                                      | 2.5417 | 1.4434  | 20   |
| 28   | Lecturers who publish research articles increase their chances for promotion.    | 2.5208 | 1.2546  | 21   |
| 2    | Lecturers are actively encouraged to carry out research.                         | 2.4894 | 0.9972  | 22   |
| 27   | Professional recognition motivates me to carry out research.                     | 2.3542 | 1.1390  | 23   |
| 14   | Inexperience restricts lecturers' research output.                               | 2.2917 | 1.1101  | 24   |
| 11   | I have a working knowledge of statistics for research.                           | 2.1250 | 0.9138  | 25   |
| 29   | Opportunities for collaborative research contribute to research productivity.    | 2.1042 | 0.7784  | 26   |
| 10   | I have confidence when writing the findings of a research study to be published. | 2.1042 | 0.8053  | 27   |
| 12   | I do not have problems in supervising students' research projects.               | 1.9167 | 1.0071  | 28   |
| 21   | High teaching loads take up lecturers' time.                                     | 1.8333 | 1.0383  | 29   |
| 26   | I am keen to carry out research.   | 1.7447 | 0.8462  | 30   |

**Table 2: Varimax Factors Loadings for Research Productivity**

| Variable | Description  | Factors |       |       |      |      |      |
|----------|--|---------|-------|-------|------|------|------|
|          |  | 1       | 2     | 3     | 4    | 5    | 6    |
| 1        | The college has a strong culture of research                                     | .712    |       |       |      |      |      |
| 2        | Lecturers are actively encouraged to carry out research.                         | .532    |       |       |      |      |      |
| 3        | Lecturers are adequately inducted into research work.                            | .772    |       |       |      |      |      |
| 4        | Some college decisions are made on the basis if research                         | .680    |       |       |      |      |      |
| 5        | There is recognition of lecturers who publish research.                          | .796    |       |       |      |      |      |
| 6        | Lecturers work collaboratively on research.                                      | .694    |       |       |      |      |      |
| 7        | Lectures are expected to carry out and publish research.                         | .586    |       |       |      |      |      |
| 8        | There is a definite research culture in my department.                           | .679    |       |       |      |      |      |
| 20       | Workshops to develop research skills among lecturers are held regularly.         | .403    |       |       |      |      |      |
| 15       | There is adequate coordination of lecturers' research work.                      |         | .438  |       |      |      |      |
| 16       | There are adequate internet facilities at the college.                           |         | .762  |       |      |      |      |
| 21       | High teaching loads take up lecturers' time.                                     |         | -.634 |       |      |      |      |
| 24       | I spend at least 2 hours per week on personal research.                          |         | .515  |       |      |      |      |
| 22       | Lecturing load is adjusted accordingly for research work.                        |         | .492  |       |      |      |      |
| 25       | Teaching load does not affect lecturers' engagement in research.                 |         | .806  |       |      |      |      |
| 9        | Formulating a research topic is very difficult for me                            |         |       | .828  |      |      |      |
| 13       | I have sound knowledge of research methods                                       |         |       | -.874 |      |      |      |
| 17       | The library has recent journals for research.                                    |         |       |       | .716 |      |      |
| 18       | The library is fully equipped with books for research.                           |         |       |       | .783 |      |      |
| 10       | I have confidence when writing the findings of a research study to be published. |         |       |       | .570 |      |      |
| 27       | Professional recognition motivates me to carry out research.                     |         |       |       | .696 |      |      |
| 11       | I have a working knowledge of statistics for research.                           |         |       |       |      | .763 |      |
| 12       | I do not have problems in supervising students' research projects.               |         |       |       |      | .744 |      |
| 26       | I am keen to carry out research.   |         |       |       |      | .627 |      |
| 14       | Inexperience restricts lecturers' research output.                               |         |       |       |      |      | .515 |
| 23       | Administrative duties reduce time available for research.                        |         |       |       |      |      | .707 |
| 28       | Lecturers who publish research articles increase their chances for promotion.    |         |       |       |      |      | .588 |
| 19       | Research funds are available for lecturers.                                      |         |       |       |      |      | .437 |
| 29       | Opportunities for collaborative research contribute to research productivity.    |         |       |       |      |      | .444 |
| 30       | Funding for participating in research conferences is readily available.          |         |       |       |      |      | .610 |

Key: Factor 1 Research Culture  
 Factor 3 Research Knowledge  
 Factor 5 Intrinsic Motivation

Factor 2 Workload  
 Factor 4 Extrinsic Motivation  
 Factor 6 - Opportunities

The six extracted factors are described as follows:

**Research culture-** is the sum total of the shared values and attitudes towards research within a given college.

**Workload** the number of hours of teaching allocated to a lecturer per week.

**Research Knowledge** theoretical and practical skills required in order for lectures to carry out research.

**Extrinsic Motivation** factors external to or outside the individual lecturer that drive him or her to carry out research and publish.

**Intrinsic Motivation-** the internal drive or will that propels lecturers to engage in research.

**Opportunities-** favourable or advantageous circumstances that make it possible for lecturers to carry out research.

Results from the study on the publishing status of the lecturers surveyed are presented in Table 3. A dependent variable, publishing status (0 not published, 1 published), was created. The table shows that 68.8 % of the respondents have not published whereas 31.2 % have published at least one article.

Table 3: Number of published articles as a measure of research productivity

| Number of Articles | Frequency | Percentage | Cumulative % |
|--------------------|-----------|------------|--------------|
| 0                  | 33        | 68.8       | 68.8         |
| 1                  | 10        | 20.8       | 89.6         |
| 2                  | 5         | 10.4       | 100          |
| Total              | 48        | 100        |              |

Results of logistic regression performed on the six factors extracted from the original thirty variables are presented in Table 4. The Wald test was then used to assess the effect of each extracted factor on the publishing status (dependent variable). The P- values

for all the six factors are greater than 0.05. It is evident that none of the factors, although associated with research productivity contributes significantly to research productivity on their own.

Table 4: Logistic Regression Model for research productivity.

| Factors  | Mean  | Coefficients | Standard Error | Wald  | df | P-value | Exp (B) |
|----------|-------|--------------|----------------|-------|----|---------|---------|
| Factor 1 | 3.058 | -0.506       | 0.527          | 0.923 | 1  | 0.337   | 0.603   |
| Factor 2 | 3.354 | 0.391        | 0.646          | 0.366 | 1  | 0.545   | 1.478   |
| Factor 3 | 2.729 | 0.078        | 0.676          | 0.013 | 1  | 0.908   | 1.081   |
| Factor 4 | 2.745 | 0.146        | 0.478          | 0.093 | 1  | 0.761   | 1.157   |
| Factor 5 | 1.938 | 0.316        | 0.472          | 0.449 | 1  | 0.503   | 1.372   |
| Factor 6 | 2.972 | 0.021        | 0.558          | 0.001 | 1  | 0.971   | 1.021   |
| Constant |       | -1.873       | 3.022          | 0.384 | 1  | 0.535   | 0.154   |

## Discussion

The study has shown that the publishing status or research productivity among lecturers in teachers' colleges is low (31.2 %). This appears to be the case despite the fact that the study also shows that college lecturers are keen and confident to do research. Respondents in the study cited lack of funding, overburdening lecturing loads, lack of extrinsic motivation and lack of resources as the main limiting factors. This is in agreement with findings made by Bazeley (2003), and King, Hill, and Hemmings (2000) in similar studies with university lecturers.

Results from factor analysis showed that workload, research culture, research opportunities, extrinsic motivation, research knowledge and intrinsic motivation contribute to research productivity among lecturers. However, these factors on their own do not seem to significantly influence the publishing status of the respondents. Grunig (1997) suggests that university funding, availability of technology, computing facilities, books and journals in the library are more directly associated with increased research productivity.

Some of the apparent reasons are that college decisions are not made on the basis of research, thereby curtailing lecturers' motivation to engage in own research. Those individuals who have published used their own initiatives to do research to publish. The findings of the present study suggest the need for the Ministry of Higher and Tertiary Education to seriously consider placing high priority on college lecturers' engagement in, and publication of research. This would have to be a policy issue. A strong resource base and incentives would also have to be put in place.

At institutional level, inculcation of a vibrant research culture backed by a significant resource base, networking and motivation are some of the pre-requisites of increased research productivity. The study observed that teachers' colleges might need to institute research publication as a requirement for promotion and advancement of lecturers through the ranks of lecturer, senior lecturer and principal lecturer. This would be in line with observations made by Magner (1994) and Edgerton (1993) that faculty promotion and tenure decisions are influenced more by faculty members' research activities rather than their excellence in teaching. Tien (2000) found that motivation for promotion differentiates between those faculty members who are productive and those who are not. Hemmings, Smith and Rushbrook (2004) observed that this finding is supported by the dictum "publish or perish" frequently noted in academic circles as noted by Everett and Entrekina (1987).

Research culture as a necessary pre-condition for research productivity could be accentuated at the level of individual institutions. Boice (1987; 1989) suggests networking and problem-solving strategies, among others, as aspects of nurturing a research culture within an institution. Research workshops, funding and resources provision as well as rationalizing lecturing loads are some of the possible avenues open to colleges.

The present study has been able to identify and describe major factors influencing research productivity in teachers' colleges. There is still room for further research because variations of research culture from institution to institution was not part of the focus of the present study. This could form the basis for further study to help shed more light on the influence of the factors described in this study. The attitudes of lecturers towards research and publishing is still another area for further exploration. The balance between research activities, teaching and community service is yet another aspect for further research. Research into the effect of gender on research productivity would throw more light on the

factors influencing research productivity among lecturers in teachers colleges.

## Conclusion

The study showed that although most lecturers in teachers' colleges have the requisite knowledge and skills to carry out research and are confident to do so their research productivity or publishing status is low. The workload, research culture, opportunities, extrinsic motivation, research knowledge and intrinsic motivation are associated with research productivity. However, on their own these factors do not seem to significantly influence publishing status among lecturers in teachers' colleges.

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